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Agriculture.

Agricultural adjustment. By Charles J. Brand. American Fertilizer.
v.79, no.2. July 15, 1933. p.8-9,26-27.

Back to the farm. By Tracy R. Welling. Utah Farmer. v.54, no.3.
September 10, 1933. p.3. Gnarled hands, stooping shoulders and
furrowed brow of tiller of soil has been glorified in poetry and prose
but if you'll acknowledge truth, you'll admit that they are signs of
intense physical exertion and continued mental turmoil and anxiety.

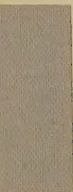
By faith we shall win. By Henry Wallace. Prairie Farmer. v.105,
no. 18. September 2, 1933. p.1,8.

Careful planning needed. By Hon. Henry Wallace. Extension Division
News. Virginia Polytechnic Institute v.15, no.12. October
1933. p.1,6-7. It is hardly to credit of any nation to have
over-produced so blindly as to need to resort to such drastic cor-
rection. It was too bad to have to turn all that product of wasted
effort back into ground. But it would have been great deal more
destructive and wasteful to have kept on doing it blindly, driven be-
fore forces of rampant, competitive individualism to general smash.

Consistent agricultural policy. Utah Farmer. v.54, no.3.
September 10, 1933. p.6,10. New agricultural policy should be
consistent in both state and national activities and must temporarily
at least scrap theory of further expansion and must in its place es-
tablish theory of restriction in agricultural production.

Cost accounts on New York farms. By J. F. Harriott and L. M. Vaughan.
1933. 67p. Cornell University. Agricultural Experiment
Station. Bulletin No. 554.

Farm income much greater. Farm Machinery and Equipment. No.1797.
September 15, 1933. p.5. Gross farm income will approximate
\$6,360,000,000 this year compared with \$5,143,000,000 in 1932, assum-
ing continued improved demand for farm products remainder of this



Agriculture. (cont'd)

year, according to preliminary estimate by Bureau of Agricultural Economics. Estimate is made up of \$6,100,000,000 from sale of farm products, plus at least \$260,000,000 in rentals and benefit payments by Agricultural Adjustment Administration.

Moving to better lands seen as resettling of America. Science News Letter. v.24, no.645. August 19, 1933. p.116. Continuation of agricultural reforms may turn marginal areas into forests, parks and suburban settlements.

National policy needed. Extension Division News. Virginia Polytechnic Institute. v.15, no.12. October 1933. p.1-3. Synopsis of address made by Norman Thomas at final session of American Country Life Association, August 4, 1933.

Using the old noodle. By G. A. Crossett. Country Gentleman. v.103, no.1. January, 1933. p.6,45.

What about those idle acres? By Francis A. Flood. The Montana Farmer. v.21, no.1. September 1, 1933. p.5. Suggestions include allowing land to lie unplanted but controlling weeds and erosion and moisture storage by summer fallowing; planting to permanent pasture or meadow crops with certain restrictions as to use of resulting feed and acceptable first year only; practicing system of weed control on contract acres that may be infested with bindweed, quack grass, thistle, etc., planting to forest trees, or to soil-improved crops with certain restrictions as to use of feed from them.

World trade barriers in relation to American Agriculture. Letter from Secretary of Agriculture transmitting in response to Senate Resolution No. 280, 72d Congress, 1st session, submitted by Senator Norbeck, a report pertaining to restrictions upon international trade in major agricultural products throughout the world, measures undertaken in several countries to protect position of their farm producers and the effects of those restrictions and measures upon prices of farm products and welfare of American farmers. Washington, 1933. 54Cp. U. S. 73d Congress. 1st session. Senate Document No. 70.

Air Conditioning.

Bibliography of information on air conditioning. 1933. 29p. mimeographed. U. S. Department of Commerce. Plumbing and Heating Products Unit.

Air Conditioning. (cont'd.)

Cooler attached to ceiling conditions air in room. Popular Mechanics. v.60, no.3. September, 1933. p.400. Instead of blowing high-speed air current into room and depending upon its force to diffuse air, cooler quietly pushes cooled air through deflectors in horizontal direction, allowing air to fall of its own weight.

Electric unit conditions air winter or summer. Popular Mechanics. v.60, no.3. September, 1933. p.329. Device, housed in cabinet that conforms to latest office and home-furnishing schemes, was produced by General Electric Company to cool and dehumidify air in summer and to warm and humidify in winter. In addition, it filters, circulates, and ventilates.

Furnace conditions home air for winter or summer. Popular Mechanics. v.60, no.3. September, 1933. p.360. Air in home may be heated in winter, cooled in summer, humidified or dehumidified and washed by furnace. Plant also provides hot water and running ice water, in addition to operating kitchen refrigerator and clothes drier in laundry. Considerable saving in fuel is claimed, in comparison with ordinary furnace which only heats and provides hot water in winter months. Firing is automatic.

Modern air conditioning. By Harold L. Alt. Pt.2. Pencil Points. v.14, no.7. July 1933. p.331-334, 21. Various types of equipment.

Modern air conditioning. By Harold L. Alt. Pt.3. Pencil Points. v.14, no.8. August 1933. p.377-380. Discussion of equipment.

Room cooled by ice and fan in portable cabinet. Popular Mechanics. v.60, no.3. September, 1933. p.391. Temperature reductions of twelve to fifteen degrees can be obtained by use of portable room cooler. Filtering bag collects dirt, dust and germs through action of fan, which draws them into both sides of cooler near bottom.

Windows - and their relation to air conditioning problems. By W. W. Shaver. Refrigerating Engineering. v.26, no.3. September 1933. p.133-136.

Associations.

A.I.E.E. committees formed for 1933-1934 activities. Electrical World. v.102, no.9. August 26, 1933. p.260.

Canadian agricultural engineers elect officers and present program. Agricultural Engineering. v.14, no.9. September, 1933. p.257.

Papers presented at fourth Southwest Soil and Water Conservation Conference. 1933. 48p. mimeographed. President, F. L. Duley, Kansas State Agricultural College, Manhattan, Kansas.

Bearings.

Investigation of journal bearing performance. By E. M. Barber and C. C. Davenport. 1933. 64p. Pennsylvania Engineering Experiment Station. Bulletin No. 42.

Building Construction.

Boards are nailed to steel in home construction. Popular Mechanics. v.60, no.3. September, 1933. Ordinary steel nail, driven into metal frame stud, follows groove in stud and clinches itself firmly in place. It may be withdrawn later without injury to stud. Steel framework does not warp or sag and is highly resistant to vibration and wear, requiring less upkeep for houses in which it is used.

Building industry will benefit from \$2,000,000,000 home relief act. American Builder and Building Age. v.55, no.4. July, 1933. p.12-13,49. Tax free bonds with interest guaranteed, to be offered in exchange for home mortgages. Ownership encouraged.

Comparative details - Eaves and gutters. Pencil Points. v.14, no.9. September, 1933. p.401-405.

Comparative details - group 10. - Stone textures. Pencil Points. v.14, no.7. July 1933. p.313-317.

Employment and values in construction. By Lawrence Mehren. Engineering News-Record. v.111, no.12. September 21, 1933. p.353-357. Circumstantial survey of construction industry, tabulating employment and values in totals and subdivided for raw materials production, manufactures, transportation and distributor agencies.

Executives of the recovery administration in contact with the building industry. Architectural Record. v.74, no.2. August 1933. p.76-77.

Building Construction. (cont'd.)

Instructions to private architects engaged upon public building work.
Architectural Record. v.74, no.2: August 1933. p.73-75.
Section 1: General information and preliminary procedure.

Urge to build is in the air. Washington Farmer. v.68, no.21.
September 21, 1933. p.3. Little planning of work of this
kind, both outdoors and indoors, will work wonders during year in
increasing home beauty and home convenience.

Tests of laminated bent rafters. Part II. By Henry Giese and
Elmer F. Clark. Agricultural Engineering. v.14, no.9.
September 1933. p.248-251,255. Tests undertaken in attempt
to determine practicable methods of improving bent rafter type of
barn roof construction in order to reduce sagging common to such
barns.

Walls made of coal blocks used in building. Popular Mechanics.
v.60, no.3. September, 1933. p.359. Twelve-inch walls
are rough-hewn blocks of coal laid with white cement, while
pilasters at two front corners are of coal sawed by hand to smooth
surface and laid with black cement.

Why tested home building methods are best. By H. Vandervoort
Walsh. American Builder and Building Age. v.55, no.4.
July, 1933. p.14-15,48-49. Too radical and novel changes are
in most cases full of troubles yet to be found. Changes should be
made step by step - built upon experience gained from actual use.
Fact that we still use wood, brick, stone, tiles and other old
materials is not evidence of backwardness of building industry, but
proof that these materials give results that no new substitutes
have been able to show.

Conservation.

Engineers and conservation. By Raymond Zack. National
Waltonian. v.1, no.1. July, 1933. p.3,14-15.

Cotton.

Cotton reduction plan. American Fertilizer. v.79, no.2. July
15, 1933. p.22,24. Table gives cotton acreage contracted as
reported to July 7 in comparison with estimated acreage in culti-
vation on July 1.

Pima Egyptian cotton in irrigated rotations at the Yuma field
station, Bard, Calif. By Stephen H. Hastings and Edward G.
Noble. 1933. 31p. U. S. Department of Agriculture.
Technical Bulletin No. 369.

Crops.

Proposed revised federal grain standards, including explanations.

1933. 159p. U. S. Department of Agriculture. Miscellaneous Publication No. 173.

Spacing of row crops in the United States. Agricultural Engineering. v.14, no.9. September 1933. p.242,244. Results of survey made by A.S.A.E. committee on row crop investigations.

This year's grain and hay crops compared with average yields. Farm Implement News. v.54, no.20. September 28, 1933. p.19. Combined production of corn, wheat and oats this year is 3,474,003,000 bushels compared with five-year average of 4,562,852,000 bushels, five-year period being years 1926-1930 inclusive. Tables give figures for principal producing states.

Dams.

A-frame-type dam readopted for Cumberland River. By F. S. Besson. Engineering News-Record. v.111, no.14. October 5, 1933. p.401-402. A-frame crest installed on navigation dam in Cumberland River increases head $4\frac{1}{2}$ ft. and gives harbor at Nashville, Tenn., 9-ft. navigable depth.

Cle Elum dam completes storage for Yakima project. Engineering News-Record. v.111, no.14. October 5, 1933. p.397-400. Rolled earth embankment 130 ft. high provides final reservoir for Yakima Valley irrigation development. Outlet tunnel driven through gravel and sinking of gate shaft are construction features. Borrowpit material rolled in $6\frac{1}{4}$ in. layers to compaction of 134 lb. per cubic foot.

New principles applied to actual dam building. By R. R. Proctor. Engineering News-Record. v.111, no.13. September 28, 1933. p.372-376. Application of principles of soil compaction, as shown by several dams constructed, is entirely practicable and does not involve increased cost.

Roller-gate dams for Kanwha River. Engineering News-Record. v.111, no.12. September 21, 1933. p.337-342. Two replacement lock-and-dam structures represent recent recommendation by army engineers of non-navigable type of movable dams for important slackwater navigation improvements.

Slide in Belle Fourche dam follows reservoir drawdown. Engineering News-Record. v.111, no.13. September 28, 1933. p.371. Twenty-five-year-old irrigation dam in South Dakota damaged for length of 600 ft. Repairs require 20,000 cu. yd. of earth and replacement of 1,500 concrete pairing blocks.

Drainage.

Drain tile code awaits N.R.A. action. Brick and Clay Record. v.83,
no.3. September 1933. p.82.

Evolution of the Hudson-Delaware-Susquehanna drainage. By J. Hoover
Mackin. American Journal of Science. 5th series. v.26,
no.153. September 1933. p.319-331.

Electric Service, Rural.

Farm line construction. By Mark Eldredge. Electrical World.
v.102, no.9. August 26, 1933. p.268-272. Comparative costs
shown. Details of design and costs.

Electricity on the Farm.

National rural project issues final report. Electrical World.
v.102, no.9. August 26, 1933. p.258. Organized in June,
1928, through cooperation of representatives of National Committee
on Relation of Electricity to Agriculture, National Electric Light
Association, University of Maryland and Consolidated Gas, Electric
Light and Power Company this project was established to expire
June of this year.

Prospectus on rural electrification in the Tennessee River basin.
By George W. Kable. 1933. 45p. mimeographed. U. S. Bureau
of Agricultural Engineering.

Extension.

Report of extension work in agriculture and home economics in the
United States, 1932. Washington, 1933. 80p.

Farm Buildings and Equipment.

Disinfection of stables. By George W. Pope. Rev., 1933. 13p.
U. S. Department of Agriculture. Farmers' Bulletin No. 954.

Do you pay a rust tax? By J. C. Wooley and Deane G. Carter.
Successful Farming. v.31, no.10. October, 1933. p.34,
68-69. Building for storing farm machinery.

New steel farm buildings are now being offered for storage and
live stock housing. Successful Farming. v.31, no.10.
October, 1933. p.24.

Farm Machinery and Equipment.

Advantages of grinding feed. Farm Machinery and Equipment.
no.1797. September 15, 1933, p.7-8.

Farm Machinery and Equipment. (cont'd.)

Appraising improvements in farm machines. By J. B. Davidson, G. W. McCuen, and R. U. Blasingame. Agricultural Engineering. v.14, no.9. September, 1933. p.239-241. Paper deals with recent study of advancement made in improving farm machines during past twenty years, or from 1910-14 to 1932.

Average purchases of machines per farm. Farm Implement News. v.54, no.20. September 28, 1933. p.15. Data compiled by Bureau of Agricultural Economics showing average amounts purchased per farm and average 1928 purchases per farm in dollars and cents. Object in presenting these figures is to indicate importance of different items of equipment in annual purchases of farmers.

Cross blocking sugar beets by machine. By E. M. Mervine and A. W. Skuderna. 1933. 6p. U. S. Department of Agriculture. Leaflet No. 97.

"Deep furrows" for spring wheat. Implement and Tractor Trade Journal. v.48, no.18. September 9, 1933. p.12. Individual farmers, testing new drills, find many advantages over previous methods in better stands and less blowing.

Maybe it just happened that way. Implement and Tractor Trade Journal. v.48, no.18. September 9, 1933. p.9. Production during greatest year of horse use sets modern records for short crops.

Mechanization in cane fields. Part II. International Sugar Journal. v.35, no.417. September, 1933. p.335-340. Regional developments in mechanization in British West Indies, Cuba, Puerto Rico, Southern States, Hawaii, India, South Africa, Java, Fiji and Australia; future of mechanization.

Reducing labor hours in cotton fields. Farm Machinery and Equipment. no.1797. September 15, 1933. p.5. Improved tillage methods and equipment in certain sections of cotton belt today have helped to reduce by more than 50 per cent hours of man labor required to produce acre of cotton.

Tractor-unit potato digger. Farm Implement News. v.54, no.20. September 28, 1933. p.20. Distinguishing feature of this underslung digger is that it is supported by tractor instead of on ground wheels, and operative parts of digger are driven from jackshaft mounted above rear axle, which jackshaft is driven from tractor. Great advantage of new type digger is that it avoids waste space at headlands for turning. Supplemental advantage is that planting units can be attached to same jackshaft structure that is used to drive digger, and one or two row power planter is available.

Varying conditions test agricultural machinery design. By L. R. Tallman. Machine Design. v.5, no.9. September, 1933. p.32-33. Examples of problems calling for ingenuity in design.

Floods and Flood Control.

Floods and the state: Editorial. Engineering News Record. v.111, no.12. September 21, 1933. p.361. It is only by thorough individual study that right foundation can be laid for policy determination, from which effective control operations can be developed. Magnitude as well as intrinsic importance of stream damage is full warrant for state action in this direction.

Mimic flood in model tests control project. Popular Mechanics. v.60, no.3. September, 1933. p.368. By means of tests accurate information is obtained on carrying in of silt and debris by San Gabriel River, and in erosion on adjoining beaches. Model, covering 2,000 square feet, is set up at California Institute of Technology.

On the determination of mean high water. By H. A. Marmer. American Journal of Science. 5th series. v.26, no.153. September 1933. p.332-343.

Tree and crop damage in flood-detention basins. By C. H. Eiffert. Engineering News Record. v.111, no.13. September 28, 1933. p.370-371. Data from May flood in Miami District basins show $2\frac{1}{2}$ to $6\frac{1}{2}$ days' submergency required to destroy grain crops.

Flow of Water and Gases.

Wave velocities in rectangular channels. J. B. Drisko. Civil Engineering. v.3, no.9. September 1933. p.532.

Forage Drying.

Hay dehydrator on car serves wide area. Popular Mechanics v.60, no.3. September, 1933. p.343. Mounted on a railway flat car, plant, weighing 123,000 pounds with flat car, is made of several units, including rotary-flame oil furnace in which heat for drying is produced, three concentric rotary-dryer drums, hammer mill, two collectors, and gasoline engines to operate various units. Green alfalfa, fresh from fields, is passed through dehydrator, its color and vitamin content are sealed in and nutritive meal is bagged.

Forests.

Our forests: What they are and what they mean to us. By Marie Foote Heisley. 1933. 34p. U. S. Department of Agriculture. Miscellaneous Publication No. 162.

Second growth timber on east Texas farms. By C. W. Simmons. 1933. 15p. Texas Agricultural and Mechanical College. Extension Service. Circular No. 4.

Fuels.

Alcohol for motor fuel. Prairie Farmer. v.105,no.14. July 8, 1933. p.2. Investigations so far conducted prove beyond question that use of alcohol for motor fuel is practical and that blended fuel is superior fuel.

Alcohol for motor fuel: Editorial. Prairie Farmer. v.105,no.13. June 14, 1933. p.6. Alcohol for motor fuel, far from having nothing in it, offers opportunity to restore to agriculture market for acreage which used to produce feed for horses. That market was taken away by internal combustion engines. It can be restored without injuring old industry, by means that will give consumer better fuel and that will solve much of agriculture's surplus problem.

Making motor fuel from surplus grain. By Herman Steen. Miller's National Federation, 1933. 2p.

More miles per gallon. Automotive Industries. v.69, no.9. August 26, 1933. p.245-247. Possibilities of improving gasoline economy by fuel selection, by design changes affecting performance and by exhaust analysis in service stations discussed by noted engineers.

Gates.

Farm gates. By R. L. Griffiths. Journal of the Department of Agriculture of South Australia. v.36, no.10. May 15, 1933. p.1132-1143. Slip rails; all metal gates; wooden gates; widening of existing gateways; useful hints on gates; wire gates; ramps for motor traffic.

Wrought metalwork - Gates. By Bernard Heatherley. Pt.2. Pencil Points. v.14, no.9. September, 1933. p.389-391.

Hay.

Hay making for 1934. By M. Glen Kirkpatrick. Farm Journal. v.57,no.10. October 1933. p.5. Latest type of lightning and fire-proof haymow.

Making hay with the windrow baler. By A. J. Schwantes. 1933. 1p. Agricultural Engineering News Letter. University of Minnesota. No. 18. September 15, 1933.

Heating.

31 Canadian homes complete season of electric heat. Electrical World. v.102,no.9. August 26, 1933. p.284-285. Table 1-Electric house heating data for typical groups. Table 2-Electric house heating data for individual installations.

Heating. (cont'd.)

Wires in walls heat room with aid of human body. Popular Mechanics. v. 60, no.3. September, 1933. p.366. Using human body itself as source of indoor heat and keeping body comfortable by controlling body's radiation of heat is suggested by L. W. Schad, of Westinghouse Electric and Manufacturing Company, as result of tests in that company's laboratories. Walls of experimental room are heated electrically and fresh air, taken directly from outside, is led through ducts in ceiling. Of 400 British thermal units given off by body, about forty-four per cent is through radiation to walls, about twenty per cent by evaporation, and rest to air. If walls and ceiling are same temperature as body, there can be no radiation, and to be comfortable, air must be much cooler to increase transfer of heat to air.

Hitches.

Another "big hitch" uses eight horses. Dakota Farmer. v.53, no.11. August 12, 1933. p.209. Utilizes full power and affords maximum of convenience.

Houses.

Conference on low-cost housing to be held in Cleveland. Engineering News-Record. v.111, no.14. October 5, 1933. p.421. October 25, 26 and 27. Purpose of conference will be to make exhaustive study of architectural, engineering maintenance and planning problems arising in those individual or group family units whose cost does not exceed \$5,000.

Fire-proof house construction favored by Public Works Board. Engineering News Record. v.111, no.13. September 28, 1933. p.390. Special board has decided to extend amortization period to 35 years, permitting loan to be amortized in 33 annual payments at rate of 1.51 per cent, beginning two years after loan.

Insect Control.

Fight grasshoppers by plowing stubble. By J. R. Parker. 1933 4p. U. S. Department of Agriculture. Circular No. 302.

Insulation.

Aluminum paint saves fuel for hot-water tank. Popular Mechanics. v.60, no.3. September, 1933. p.391. Forms a metallic film that acts as insulation.

Insulation for house construction. By J. D. Hoffman. 1933. 31p. Purdue University. Engineering Extension Department. Extension Series No. 31.

Insulation. (cont'd.)

Selection of building insulation. By Theo. F. Rockwell. Architectural Record. v.74, no.2. August 1933. p.149-154. Part 2. Calculation of heat economies.

Irrigation.

Discharge of drains serving irrigated lands. By L. T. Jessup. 1933. 65p. mimeographed. U. S. Bureau of Agricultural Engineering.

Gigantic lakes to bring rain proposed for desert. Popular Mechanics. v.60, no.3. September, 1933. p.361. Millions of acres of land may be brought under irrigation for cultivation, and rainfall may be increased over 1,092,000 square miles of desert in Union of South Africa. It is proposed that several rivers and streams be diverted to create gigantic lakes in Kalahari desert. Under existing conditions, rainfall that does occur is lost, as rivers flood for time and then dry up, due to deforestation in watersheds and along banks.

Operating problems on the federal irrigation projects. By George O. Sanford. Agricultural Engineering. v.14, no.9. September 1933. p.245-247. During 31 years of its existence, Bureau of Reclamation has constructed 27 projects, in arid section of U.S. and is now delivering water to approximately 2,000,000 acres of land. On these projects, 42,500 rural homes have been established with population of 177,000 people. Additional population of more than 500,000 is registered in 227 cities and towns that have come into existence almost entirely as result of construction of these projects. Nearly \$200,000,000 has been spent on this work and 22 per cent of this sum has already been repaid. Average gross value of crops on different projects has ranged all way from \$10 to more than \$200 per acre, with average for all projects during past ten years of record of \$38 per acre.

Willamette Valley discovers water! By George N. Angell. Oregon Farmer. v.56, no.20. September 7, 1933. p.3,18. Irrigation promises revitalization of area's agriculture.

Lighting.

Convenience control of residence lighting. By J. C. Runyon. Electrical World. v.102, no.11. September 9, 1933. p.349-351. Wiring scheme which permits portable master control of all lighting in any room to be connected at variety of positions to conform with rearrangements of furniture or desires of occupant.

Tiny motor runs light plant for fourteen-room house. Popular Mechanics. v.60, no.3. September, 1933. p.365. Tiny motor, only one and one-half horsepower, drives generator, which was taken from Ford automobile. Two second-hand auto storage batteries, two used Ford fuses, throw switch, sixteen thirty-two candlepower Ford head-lamp bulbs, inexpensive reflectors, ammeter, sockets and necessary

Lighting. (cont'd.)

wiring complete outfit. Eight lamps are supplied current from each battery. Operating costs are low, about \$1.50 per month for plant, which was installed in fourteen-room summer-resort home. At end of six months, repair costs amount to about one dollar, this being for work on little one-cylinder engine. Feature of outfit is that motor, which is fastened firmly to its own individual base, can be disconnected from generator and used for other work around farm or summer home.

Lubrication.

New lubricant. Farm Implement News. v.54, no.19. September 14, 1933. p.20. Metallic lead is protective element. New product, known as Bestolife, forms thin protective film of lead on all contacting surfaces which changes such surfaces to continuous unbroken, anti-frictional area. Lubricant has pure metallic lead base instead of lead salts and is said to be free from chemical reactions. Minimum constituency of lead is 15%, ranging up to 65%, and is claimed to withstand temperatures up to 430° and will not entirely lose its lubricating stability until melting point of lead is reached.

Symposium on motor lubricants. American Society for Testing Materials. 1933. 121p.

Meters.

Constant head flow meter. By Weston Gavett. Water Works and Sewerage. v.80, no.8. August, 1933. p.282. Some advantages of constant head type of measuring device are: 1. Loss of head is constant, and may be very small, 0.1 or less. 2. Meter is actuated by difference in head as orifice is submerged. 3. Relation between movement of meter and flow is straight line, unlike weirs, fixed orifices or Venturi meters. 4. Movement of plate in tube is practically frictionless. 5. Range of meter can be varied by changing counterweight. 6. Sewage solids are not deposited in channel such as takes place when weirs are used. 7. Design is well adapted for synchronized flow. 8. Where meter is used to measure effluent flow to tidal waters it may be arranged to act as tide valve or check valve by provision of plate "S" on top of meter tube as shown in diagram.

Miscellaneous.

Buying power from wheat bonus. Implement and Tractor Trade Journal. v.48, no.18. September 9, 1933. p.8. Western farmers to benefit most from new capital as control of world, as well as domestic, production is established. Table gives maximum payments possible under AAA wheat bonus program.

Miscellaneous. (cont'd.)

- Car-lot shipments of fruits and vegetables from stations in the United States for the calendar years 1930 and 1931. 1933. 151p.
U. S. Department of Agriculture. Statistical Bulletin No. 42.
- Forty-fifth annual report of the agricultural experiment station of the University of Kentucky for the year 1932. 1933. 75p.
- Gypsum-incased steel columns subjected to fire tests. By Nolan D. Mitchell. Engineering News-Record. v.111,no.7. August 17, 1933. p.195-196. New tests demonstrate importance of some form of positive bond to hold gypsum blocks in place, also increased efficiency obtained by placing blocks.
- Handy man's handbook. By C. T. Schaefer. N.Y., Harper and Brothers publishers, 1931. 273p. Handbook on general mechanical operations, including wood, metal, electrical, and plumbing work - tools, their use and abuse, for handy man in home, apartment or public buildings, on farm and in factory.
- How to save time, save money and make profits in farming and home-making. n.d. 88p. Ideas contributed by Successful Farming readers.
- Intellectual interchange among faculties of engineering schools. By Professor Dugald C. Jackson. Science. v.78,no.2023. October 6, 1933. p.291-296. Man who becomes over-trammelled by rules, precedents and tradition will always remain commonplace man. Ones who break conventional rules with convincing service to fellow men and without injury to social organism are leaders.
- Opportunity created by Recovery Act. Farm Implement News. v.54, no.19. September 14, 1933. p.18-19. Excerpts from address by Gen. Hugh S. Johnson, delivered at Century of Progress Exposition in Chicago September 4.
- Population of Missouri. By Henry J. Burt. 1933. 138p. Missouri. Agricultural Experiment Station. Research Bulletin No. 188. General survey of its sources, changes, and present composition.
- Roosevelt appoints science advisory board. Science News Letter. v.24,no.645. August 19, 1933. p.123-124. To aid government in coping with scientific problems which new era in American development will bring.
- Smithsonian physical tables. 8th revised edition. By Frederick E. Fowle. Washington, 1933. 682p. Smithsonian Institution, Publication No. 3171.
- Taxation according to benefits. By M. Slade Kendrick. Farm Journal. v.57,no.10. October 1933. p.7. If farmers and other economic groups were taxed according to benefits received from tax-expenditure, much relief would be felt from present burdens.

Miscellaneous. (cont'd.)

Twenty-eighth biennial report of the Kansas state board of agriculture to the legislature of the state for the years 1931 and 1932. Topeka, 1933. 584p. Rural engineering. p.133-155.

Twenty years of Ohio agriculture, 1910-1930. By J. I. Falconer. 1933. 110p. Ohio. Agricultural Experiment Station. Bulletin No. 526.

Work of the agricultural experiment station. By F. B. Mumford, and S. B. Shirky. 1933. 46p. Missouri. Agricultural Experiment Station. Bulletin No. 328. Report of the Director for the year ending June 30, 1932.

Moisture.

Rapid method for measuring the moisture content of wheat. By W. H. Cashmore. 1933. 24p. Institute for research in Agricultural Engineering. University of Oxford.

Review of results of dielectric methods for measuring moisture present in materials. By N. E. Edlefsen. Agricultural Engineering. v.14, no.9. September 1933. p.243-244. Discussion summarizes findings of various investigators regarding dielectric methods of measuring amount of water in grains, grain products, cotton bales, and soils. Effect of temperature and concentration of solution on dielectric constant is discussed.

Motor Vehicles.

Three-hundredths of a cent auto's cost per minute. Popular Mechanics. v.59, no.6. June, 1933. p.880. If \$900 car is operated twenty-four hours per day year round, .03 of cent is minute by minute expense for interest, insurance, license, garage, taxes and depreciation per year. Gasoline burned is not included. If you don't drive your car that much, you have to charge more than .03 of cent a minute at stop lights.

Poultry Houses and Equipment.

Feed hoppers. 1933. 4p. Massachusetts State College. Extension Service. Extension Leaflet No. 76.

Poultry house wiring amortized in one season. Electrical World. v.102, no.14. September 30, 1933. p.435. Table gives approximate material costs chicken house wiring.

Power.

Living in the power age. By William Boss. Agricultural Engineering. v.14, no.9. September, 1933. p.235-238. We must get rid of false theories, learn to waste intelligently, to dispose of things which are inefficient, to encourage new improvements, to preserve good and that which is efficient, and to encourage thrift.

Power-belt pulley on auto drives many machines. Popular Mechanics. v.60, no.3. September, 1933. p.408. Belt pulley, measuring six by six inches, has speed equal that of auto or truck motor and produces twenty horsepower. It is installed on front frame. Six-blade fan, replacing regular fan, provides adequate air flow for biggest job in warm weather. Square hole in end of crankshaft fan pulley accommodates end of drive shaft of device. Regular crank ratchet, removed when replacing pulley is attached, is inserted in front end of power attachment to provide engine-cranking accommodations. Use of power unit does not prevent car or truck from serving its usual purposes.

She ain't what she used to be. Prairie Farmer. v.105, no.13. June 24, 1933. p.1,5. Problem of tractor vs. horses for corn-belt farm power seems to have been settled once and for all.

There are not enough colts coming on. By J. E. Nordby. Idaho Farmer. v.51, no.16. July 13, 1933. p.6. Twenty million acres of surplus crops would be consumed if horse population were normal.

Public Works.

Answers to questions on P.W.A. loan procedure. Engineering News Record. v.111, no.11. September 14, 1933. p.324-325. Types of municipal projects eligible for loans under Recovery Act, extent of grants, and loans under Act, effect of its labor provisions on municipal construction and other questions frequently raised are authoritatively answered.

Federal allotments for public works. Science. n.s. v.78, no.2020. September 15, 1933. p.240-241.

Information needed for housing loans listed by Public Works Administration. Engineering News-Record. v.111, no.7. August 17, 1933. p.210.

P.W.A. today: Is it a failure? Engineering News-Record. v.111, no.14. October 5, 1933. p.412-417. Telegraphic survey of state conditions. Tables give Public Works Administration allotments and approvals to October 1, 1933 - amounts distributed by states. Federal allocations not distributed by states.

Pumps and Pumping.

New rotary pump. By C. E. Anderson. Refrigerating Engineering. v.26, no.3. September, 1933. p.143, 152.

Pumps and Pumping. (cont'd.)

Unusual design characterizes new rotary pump. Power. v.77,no.10.
October, 1933. p.512.

Reclamation.

Land reclamation on River Tees. Civil Engineering (London) v.28,
no.324. June, 1933. p.211-215. Construction of timber
revetment 7600 ft. long, driving of 3800 piles, building of pumping
plant and similar works for reclamation of land estuary of River
Tees, where so far 3350 acres have been reclaimed for industrial
sites.

List of reclamation districts. Compiled by Reclamation Board,
State of California. Sacramento, 1930. 26p.

Refrigeration.

Absorption refrigeration with solid absorbents. By R. M. Buffington.
Refrigerating Engineering. v.26, no.3. September, 1933.
p.137-142,152.

Automatic control for refrigeration. By James Ray Duncan. Re-
frigeration, Cold Storage and Air Conditioning. v.4,no.4.
July 31, 1933. p.20-21.

Dry ice - its uses and possibilities in review. By R. H. Dowling.
Refrigerating Engineering. v.26,no.3. September, 1933.
p.121-125. Some operating data. Table gives analysis of
costs,10-ton dry ice plant, dollars per pound.

Evaporator heat transfer analysis. By Frank O. Gaskill. Re-
frigerating Engineering. v.25,no.3. September 1933.
p.126-132. Individual coefficients experimentally determined
for ammonia cooling water in inclined steel pipes. Detailed
results of laboratory study of evaporation process with refer-
ence to heat transfer. Experimental transfer values are given,
and variations in effect of refrigerant surface film noted.
Liquid super-heating factor was observed in tests. Gives
specific conclusions.

Latent heat of foodstuffs. By W. R. Woolrich. 1933. 18p.
Tennessee. Engineering Experiment Station. Bulletin No. 11.

Research.

Forgotten job. By J. Sidney Cates. Country Gentleman.
v.103,no.1. January, 1933. p.9,40. Research was old
central nucleus around which has been built up Department of
Agriculture, an organization which was at one time termed greatest
research institution in history of world. But there is today in
this Department a tendency not only to stunt normal research
growth, but to cripple seriously, through starvation, its ability
to function. This tendency is, I believe, result of failure of
American people to appreciate lowly position research has come to
occupy in government department where it was one of first importance.

Rivers.

New cutoffs being made on the Mississippi. Engineering News Record. v.111, no.12. September 21, 1933. p.358-359. Dike break at Leland Neck in Greenville Bends hastens channel - straightening program for Mississippi River and Arkansas River to Vicksburg.

Two river development boards named by P.W.A. administrator. Engineering News Record. v.111, no.14. October 5, 1933. p.422. Arkansas basin committee. Red River basin committee.

Rope.

Yardstick for wire-rope safety. Power. v.77, no.10. October, 1933. p.524-526.

Silos.

Banner season for silos - and for silo selling. Building Material Digest. v.2, no.9. September, 1933. p.6. Description of temporary silo constructed of snow-fencing or cribbing lined with reinforced waterproof paper.

Comparison of a trench silo with an upright silo. By J. R. Dawson and A. G. Van Horn. 1933. 16p. U. S. Department of Agriculture. Circular No. 274.

Construction of a trench silo. Hoard's Dairyman. v.78, no.13. July 10, 1933. p.247.

Soils.

Character and behavior of organic soil colloids. By M. S. Anderson and Horace G. Byers. 1933. 32p. U. S. Department of Agriculture. Technical Bulletin No. 377.

Field and laboratory verification of soil suitability. By R. R. Proctor. Engineering News Record. v.111, no.12. September 21, 1933. p.348-351. Consolidation and percolation tests and test results. Saturated plasticity. Swelling and bearing power.

Grades of peat and muck for soil improvement. By A. P. Dachnowski-Stokes. 1933. 31p. U. S. Department of Agriculture. Circular No. 290.

Index for rating the agricultural value of soils. By R. Earl Storie. 1933. 44p. California. Agricultural Experiment Station. Bulletin No. 556.

Maintaining fertility of Grande Ronde soils. By W. L. Powers and D. E. Richards. 1933. 23p. Oregon. Agricultural Experiment Station. Bulletin No. 311.

Spraying and Dusting.

Dusting versus spraying apple orchards in Ohio. By F. H. Ballou and I. P. Lewis. 1933. 17p. Ohio Agricultural Experiment Station Bulletin No. 527.

Storage Houses and Cellars.

Root storage is simple. By L. J. Smith. Washington Farmer. v.68, no.21. September 21, 1933. p.6. May be built at moderate cost.

Stream Flow.

Remperature effect on river flow studied in Germany. By Samuel Shulits. Engineering News Record. v.111, no.14. October 5, 1933. p.410. Tests revealed no measurable influence of temperature or gradient on velocity of flow in canal.

Swine Sanitation.

Effectiveness of the swine sanitation system in the south. By E. M. Nighbert and J. W. Connelly. 1933. 15p. U. S. Department of Agriculture. Technical Bulletin No. 374.

Tires.

Experiments show advantages of pneumatic farm tractor tires. Automotive Industries. v.69, no.9. August 26, 1933. p.251.

Farming on rubber. By E. T. Leavitt. Farm Journal. v.57, no.10. October, 1933. p.4,21. Pneumatic tires save time and gasoline.

Tobacco.

Avoid guess work in air curing tobacco. By E. J. Kinney. Southern Agriculturist. v.63, no.8. August 1933. p.10. Type of house and location important.

Tractors.

Experiences with general-purpose tractors. By R. U. Blasingame. Agricultural Engineering. v.14, no.9. September 1933. p.254-255.

More tractor hours mean lower costs. Farm Machinery and Equipment. No. 1797. September 15, 1933. p.3-4. Illinois Agricultural College studies show importance of maximum use to bring hourly expense to minimum.

Tractors. (cont'd.)

Tractors pulled them through. By Kenneth Stalcup. Farm Implement News. v.54,no.19. September 14, 1933. p.17. Something more than cost of gasoline and interest on investment must be taken into consideration in reaching final result. It is immeasurable factor of value of saving crop, or half crop, during emergency, plus value of getting crop into ground at earliest possible moment when time for planting comes.

Tractors solve farmers' bad weather problem. By E. R. Durgin. Farm Implement News. v.54,no.19. September 14, 1933. p.16-17. Users' reports show how time was saved and work done in season notwithstanding unfavorable conditions.

Work on farms speeded up with faster tractors. Popular Mechanics. v.60,no.3. September, 1933. p.354. Four-speed transmission permits wide range in rates of travel, varying from five miles an hour or less when hooked to plow to thirty-five miles an hour on the road. Low-pressure tires are used which operate equally well in field or on pavement. It is estimated increased speeds eventually will mean saving of 125,000,000 hours a year to American tractor owners, and another saving of \$10,000,000 a year in fuel costs. Tests have been made that show increase of over twenty-seven per cent in acreage plowed when air tires were used in comparison with steel wheels, and saving in fuel of more than twenty-three per cent. Higher-speed farm equipment is also designed to work with faster tractors.

Water Power.

Water power available in Santiam River basin, Oregon. Engineering News Record. v.111,no.12. September 21, 1933. p.343. Total potential water power without storage is 143,000 h.p. for 90 per cent of time and 447,000 h.p. for 50 per cent of time. With storage at proposed reservoir sites, these figures would be increased to 351,000 and 492,000 h.p. respectively.

Water Supply.

Groundwater resources of northeastern Pennsylvania. Engineering News Record. v.111,no.11. September 14, 1933. p.314. Study by U. S. Geological Survey and Pennsylvania Topographic and Geologic Survey.

Wood.

Termites and their threat to timber structures. By A. A. Brown. Engineering News-Record. v.111, no.8. August 24, 1933. p.221-224. Summary of five-year study of species of wood-destroying habits of prevalent pest, of woods immune to attack and of preservative treatments that prevent attack.

Wood. (cont'd.)

Wood borers remove piles from building foundations. By C. A. P. Turner. Engineering News-Record. v.111,no.6. August 10, 1933. p.159-160. Loft building in St. Paul, Minnesota, settles dangerously because wood borers eat wood piles out from under wall and column footings.

Wood Preservation.

Efficiencies of tar oil components as preservative for timber. By F. H. Rhodes and Ira Erickson. Industrial and Engineering Chemistry. v.25,no.9. September 1933. p.989-991.

Injury to buildings by termites. By Thos. E. Snyder. 1933. Sp. U. S. Department of Agriculture. Leaflet No. 101.

Preservative treatments of post woods. By Deane G. Carter. Agricultural Engineering. v.14,no.9. September 1933. p.252-253. Table II-Comparative value of preservative methods as indicated by years of service of wood specimens.

Service records of treated and untreated poles. By R. M. Wirka. Electrical World. v.102,no.4. July 22, 1933. p.116-121. Serviceable life of poles is affected by such factors as changes in wire load, reconstruction and rerouting of lines, species, soil and climatic conditions, size, and treatment, if any. Of butt treatments under observation hot-and-cold bath process with creosote has been found most effective. Brush method is less effective than hot-and-cold bath method, but its use may sometimes be permissible where it is impracticable to use more thorough treatment. Extension of life resulting from brush treatments with good preservative should generally be sufficient to more than pay for cost of application. Two coats of a good preservative applied by brushing should generally be more effective than one. Chestnut, Northern white cedar and Western red cedar poles that were butt treated with creosote by hot-and-cold bath process are giving excellent service in regions in which they are under test. Though tops of Western red cedar poles in southern California are being attacked by termites, they will give average physical life of at least 25 years. Lodgepole pine poles that were butt creosoted by hot-and-cold bath process are giving long service in regions where top decay is not factor; for example, in higher altitudes of Rocky Mountain regions. Under more severe service conditions lodgepole pine poles would need top treatment also if maximum life is to be obtained from them. Tests with ponderosa pine and white fir poles that were butt treated with creosote by hot-and-cold bath process show that in part of California where they are being used top treatment also is necessary for maximum service. While data on treatments using "Anaconda Wood Preservative" (dust and granules) are not very comprehensive,

Wood Preservation. (cont'd.)

they indicate that this material will not be so effective as hot-and-cold bath treatment with creosote. Increasing resin content in pole butts proved of little value in extending life of lodge-pole pine poles. There appears to be no advantage in seasoning poles to be used untreated before setting them in line. Extension of life to be accomplished by thorough preservative treatment is proportionately greater in poles of non-durable species than in poles of naturally durable species. Butt treatments should extend well above ground line if decay-producing fungi are to be repelled in that area.

Treated wood resists fire, rot, and termites. Popular Mechanics. v.60,no.1. July, 1933. p.28. Wood treated with new chemical solution resists fire, rot, and termites. Soft woods are made hard enough to take finish like mahogany. Chemical also may be used for spraying foundations of buildings to eradicate destructive insects without destroying plant life near by. Fabrics, tentings, awnings, brake linings, cloth and materials used in covering wings of aircraft can be made non-inflammable by treatment with this solution. Treated cloth held over lighted match will not carry fire, flame going out when match is removed.

